

## ABSTRACT OF THE DISCLOSURE

A computer software tool for aiding in the design of combinatorial logic and sequential state machines comprising, according to the preferred embodiment, an apparatus and methods for representing and displaying a mathematical transform between a binary output variable and a set of binary input variables. The apparatus includes a computer software program which performs a method having the steps of separating input variables of a transform into successive fields, providing field combination maps having cells representative of binary combinations of field variables, assigning field combination maps of successive fields to each preceding field cell, and assigning binary values to field cell chains formed thereby. The computer software program also enables the visual display, on the display of a computer monitor, of the combination maps and the relationship between combination maps of preceding and successive fields. The process of visually displaying the combination maps includes a step of collapsing selected fields and maps associated therewith to reduce clutter on the display and to enable the use of transforms having a large number of input variables without becoming unwieldy. The collapsing of selected fields and maps on the display also enables the selected display of only combinations of those input variables that effect the value of selected outputs. The display of combination maps and the collapsing of selected maps, in addition, more easily enables a user to insure that all input variable combinations have been considered and that only one transform value has been assigned to each of the combinations.